Computer Science

Short Questions

9

Define computer

Computer is an electronic device used to solve various problems according to a set of instructions given to it. A computer can accept data. It can process data into useful information and store it for later use. The results of computer can be used for large number of applications.

How does the abacus work?

Abacus was first computing device developed 5000 years ago. It was used to perform simple addition and subtraction. Abacus was a wooden rack. It contained horizontal wires with beads strung on them. All arithmetic calculations were performed by moving beads according to programming rules.

Who was John Napier?

John Napier was a Scottish mathematician. He created logarithm tables to facilitate calculations. He also created a device known as Napier's bones. The device used rods to perform arithmetic calculations. It was designed in the early 17th century. The device was widely used by accountants and bookkeepers.

State the role of Pascal

Blaise Pascal was a French mathematician. He invented a mechanical adding machine in 1642 known as Pascaline Calculator. The machine contained different metal wheels. Each wheel displayed the digit 0 to 9. It could only add and subtract numbers.

Which machine was developed by Von Leibniz?

Von Leibniz was German scientist. He developed a calculating machine in 1694. It was the first calculator that could multiply and divide also. It was similar to Pascal's calculator but it was more reliable and accurate.

Describe the work of Charles Babbage

Charles Babbage was a mathematician. He started his work in Cambridge, England to design an automatic mechanical calculating machine. He created the working model of machine by 1822. It was steam powered and fully automatic. It could also print the results. It was known as Difference Engine.

What is Difference Engine?

Difference Engine was an early calculator designed by Charles Babbage. It was automatic, mechanical calculating machine. It was steam powered and fully automatic. It could also print results.

How were punched cards used?

Punched cards could store data and results produced by computer. The invention of punched cards opened a gate to modern data processing. These cards provided the facility of input, output and memory storage on a large scale.

What is the idea of modern stored program EDC?

The idea of modern stored program EDC states that data and programs can be stored in the same memory. Thus machine itself can alter its program or internal data. The computing and programming became much faster, more flexible and efficient due to these ideas. The idea was adopted universally.

State the purpose of VLSI in computers

VLSI technology made it possible to place hundreds of thousands of transistors on a single chip. This advancement continued and led to the introduction of Personal Computers. The personal computer is smaller in size and inexpensive.

Which technology was used in first generation of computers?

The first generation computers used vacuum tubes. Vacuum tube was expensive because of the material and skill required to manufacture it. It also becomes hot and burns out. The examples of first generation computer are ENIVAC and UNIVAC-I.

What do you know about ENIAC?

ENIAC was the first general-purpose electronic digital computer. It was very heavy and large in size. It consumed 140 kilowatts of power. It performed arithmetic operations in decimal number system. It had to be programmed manually by setting switches.

What do you mean by UNIVAC?

UNIVAC stands for Universal Automatic Computer. It was the first computer for commercial use. It was delivered to US bureau of census in 1951. It was used for scientific and commercial use.

Which technology was used in second generation of computers?

The second generation computers used transistors. The scientists of Bell Laboratories developed transistor in 1947. These scientists include John Bardeen, William Brattain and William Shockley. The size of computer was decreased because of replacing vacuum tubes by transistors.

Which technology was used in third generation of computers?

The third generation computers used integrated circuits. The first IC was invented and used in 1961. The size of an IC is about $1/4$ square inch. A single IC chip may contain thousands of transistors. The computer became smaller in size, faster, more reliable and less expensive.

Describe the fourth generation of computers

Fourth generation computers started with the invention of microprocessor. The microprocessor is a complete processing circuit on a chip. It contains thousands of ICs. Ted Hoff produced the first microprocessor in 1971 for Intel. The advancements were made in technology of integrated circuits.

Write some advantages of transistors

1. The size of 200 transistors in computer is equal to 1 vacuum tube.
2. The price of transistor is less than vacuum tube.
3. It is also 40 times faster than vacuum tube. Transistors do not burn due to heat.

How did microprocessor affect computers?

Microprocessor revolutionized the computer world. It greatly reduced the size of computer. The size of modern microprocessor is usually one square inch. It can contain millions of electronic circuits. Microprocessor is used in many electronic devices such as microwave ovens, cars and wristwatches.

What do you know about fifth generation of computers?

Fifth generation computers are based on artificial intelligence. They are in development stage. Some applications of this generation are being used like voice recognition. Scientists are working to increase computer speed. The goal is to develop a computer that respond to natural language input.

Define analog computer

An analog computer recognizes data as continuous measurement of physical property. It uses electronic or mechanical phenomena to solve a problem. It uses one kind of physical quantity to represent another. It does not operate with digital signals.

Define digital computer

A digital computer processes data in numerical form using digital circuits. It performs arithmetic and logic operations with discrete values. These values are 0 and 1. Everything is described in two states of on and off. The digit 1 represents ON and 0 represents OFF state.

Differentiate between analog and digital computer

Analog computer provides continuous value but digital computer provides discrete value. Analog computer has low memory and low speed but digital computer has big memory and high speed. Analog computer is less reliable but digital computer is more reliable.

Which computer combines the characteristics of analog and digital computers?

A hybrid computer combines the characteristics of analog and digital computers. It can accept data in analog and digital form. It also displays output in both forms. It can produce highly accurate and precise results. Hybrid computers are used in robotics and medical labs.

Which is the most powerful computer?

Super computer is the most powerful computer. It is also very large in size. It can

process huge amount of data. The fastest super computer can perform more than 1 trillion calculations per second. A modern super computer consists of thousands of microprocessors.

State the purpose of mainframe computer

It is designed to perform multiple tasks for multiple users at the same time. It is more powerful and expensive than minicomputer. It consists of multiple processors. It can store a huge amount of data.

What is minicomputer?

Minicomputer is less powerful than mainframe computer. It is larger and more powerful than personal computer. It can support the input and output requirements of many users at a time. It can be used in networked environment as server computer. It is less expensive than mainframe computers.

Differentiate between mainframe computer and minicomputer

The mainframe computer is used by large organization but minicomputer is used by medium organizations. Mainframe computer can serve several thousand users at a time but minicomputer can serve several hundred users at a time. Mainframe is more expensive than minicomputer.

Write some characteristics of minicomputer

Minicomputer is a large and powerful computer. It can support input and output requirements of many users at a time. It can be used in networked environment as server computer. It consists of two or more processors.

Define microcomputer

Microcomputer is also called Personal Computer (PC). It is typically designed for individual users. It is less powerful computer as compared to minicomputer. It is very popular because of low price. These computers are also used in business, education and other fields of life.

Write different types of personal computers

Different types of personal computers are desktop computers, notebook computers and pocket computers.

Define pocket computer

Pocket computer easily fits in the hand of user. It contains small and light batteries that can be recharged. It does not have full size keyboard. It contains small screen and small keyboard. Pocket computers use a special operating system. Some handheld computers support voice input. It is also called handheld computer and palmtop computer.

State the use of laptop computer

Laptop computer is a portable computer. It can be brought anywhere easily because of light weight. It is small in size and can be placed easily on lap. Only one user can

use it at a time. It uses less power. A laptop computer can perform the same basic functions as a desktop computer.

Define desktop computer

Desktop computer is the most common type of Personal Computer (PC). It is designed in a way that all its components fit on desk to table. Most commonly used desktop computers are Apple Macintosh and Personal Computer (PC).

Differentiate between laptop and desktop computer

Laptop computer is designed for easy computing and can be moved easily but desktop computer is not easy to move. Laptop is more expensive than desktop computers and consumes less energy. Desktop computers can be expanded easily than laptop computers.

How are the Internet and computers important in banking?

Internet and personal computers have provided an opportunity for banking industry. Banks are using powerful computers to perform millions of transactions. Banks are providing the facility of ATM. All ATMs are computerized and connected together through computer network. People can draw money from ATM at any time.

How are computers used in retailing applications?

The modern stores are using computers for different purposes. The computers prepare bills in less time. The user can also use credit card to purchase goods. It allows the customers to conduct shopping without carrying cash. The computer generates receipt and the customer pays the bill.

Define program with one example

A set of instructions given to the computer to solve any kind of problem is called a program. The program is executed by the CPU. For example, a program can be used to find the Average of three numbers.

Describe programming language

A set of words and symbols used to write programs is called programming language. A programming language defines format to write instructions in specific order. It also provides framework for expressing algorithms. It is a means of communication between a user and a computer.

Define the BASIC language

BASIC is a high-level language specially designed for students to learn programming. It is easy for beginners to use. It is a general-purpose language.

State the purpose of language translator?

Language translator is a program that translates a high level language program into machine code. Computer understands only machine language. A program written in high-level or assembly language cannot be run on computer directly. It is converted into machine language before execution.

Write down the names of different language translators.

Different language translators are assembler, compiler and interpreter.

Why we prefer compiler over interpreter?

The compiler translates t6he whole program at once and makes an object program. The object program can be executed again and again. However, the interpreter does not create an object program. The program is translated every time it is executed. That's why compiler is preferred over interpreter.

Distinguish between high level and low level languages

High-level languages are easy to learn but low-level languages are difficult to learn. High-level languages provide less facility at hardware level but low-level languages provide much facility at hardware level. High-level languages are used to write application software but low-level languages are used to write system software.

Write any three positive impacts of computer and Internet on society

Firstly, the use of computer makes different tasks easier, quicker and efficient. Secondly, the computer is used in education to improve teaching and learning. It is used to educate the students effectively. Thirdly, computer and Internet is used by people to conduct financial transaction. They can pay bills and send or receive money online.

Write any three negative impacts of computer and Internet on society

Firstly, the use of computer has increased unemployment as different tasks are performed through computers. Secondly, many people use computer without any purpose. They waste time and energy. Thirdly, computer and Internet is used to commit crimes. People hack card numbers and theft the money.

Define electronic data processing

The process of performing arithmetic and logic operations with the help of computer is called electronic data processing. Computer is used to performs different operations in electronic data processing. The computer accepts data and processes it for different results.

Define computer hardware

The physical parts of a computer are called hardware. Hardware can be touched or seen by user. Different types of hardware components are input devices, central processing unit, output devices, storage devices and memory chips.

How is hardware different from software?

Hardware are physical parts of computer but software is a set of instructions given to computer to solve a problem. Hardware can be touched but software cannot be touched. Hardware is repaired in case of problem but software is debugged in case of problem.

Why hardware is useless without software

Hardware is useless without software because the hardware cannot perform any task without software. Software contains the instructions to be executed by the hardware.

Describe the relationship of software and hardware

The hardware cannot perform any task without software. Software cannot be executed without hardware. Computer becomes useful when hardware and software are combined.

What is the difference between application software and system software?

System software gives application software access to computer's resources. It enables the application software to run on computer hardware. Application software allows the user to run software to perform different activities.

Define computer software and write is types

A set of instructions given to computer to solve a particular problem is called software. It is also known as program. A computer works according to the instructions written in software. Two main types of software are application software and system software.

Name different types of application software

Different application softwares are Word processing software, spreadsheet software, database software and graphic software etc.

How does software relate to hardware?

The hardware cannot perform any task without software. The software cannot execute without hardware. A computer becomes useful only when hardware and software are combined.

What is the use of input unit?

The input unit of a computer system consists of input devices. Input devices are used to input data and instructions into the computer. Different types of input devices are used to input different type of data. The input unit of a computer may contain one or more input devices.

What is the use of output unit?

The output unit of a computer system consists of output devices. Output devices are used to get results from the computer. Different types of output devices are used to get different type of results. The output unit of a computer may contain one or more output devices.

Define system unit

The system unit consists of different components enclosed in a rectangular casing. The casing is available in two models. The vertical shape is called tower casing. The horizontal shape is called desktop.

Describe motherboard

Motherboard is a rectangular circuit board. It is made up of silicon. All components in system unit are connected to motherboard. An electronic pathway on motherboard connects different components of system unit with each other.

Define system software

System software is set of programs to control and manage the actual operations of a computer hardware. It controls the usage and allocation of different hardware components. It enables application programs to execute properly. It also provides User Interface to let user to communicate with the computer.

Name different types of system software

Different types of system software include operating system, utility programs and language translators.

Define application software

Application software is used to perform various tasks on the computer. It helps a computer user to perform specific tasks. People use application software according to their needs. It is also known as software package.

State the importance of CPU in computer

CPU is the brain of computer. It is the most important component of a computer. A computer cannot work without CPU. All computers must have a CPU. It can perform arithmetic and logical operations like addition, subtraction etc. It executes instructions and controls other parts of computer.

Write down different parts of CPU

Different parts of CPU include arithmetic logic unit (ALU), control unit (CU) and registers.

Define ALU

ALU consists of electronic circuitry the executes all arithmetic and logical operations. The actual execution of instructions takes place in ALU.

Which functions are performed by arithmetic unit of CPU?

Arithmetic unit of ALU perfumes the basic arithmetic functions. The basic arithmetic functions are addition, subtraction, multiplication and division.

Which functions are performed by logic unit of CPU?

Logic unit of ALU performs the logical operations. A logical operation is usually a comparison of numbers, letters or special characters. A comparison operation is performed to make decisions. A computer can take a specific action based on the result of a comparison.

Which functions are performed by control unit?

Control unit directs entire computer system. It controls and coordinates all activities of computer system. It does not execute program instructions by itself, it directs

other parts of computer to perform different tasks. It also controls the flow of information through the processor.

What are registers?

A register is a small high-speed memory inside CPU. CPU contains many registers. Registers store information being processed. There are temporary storage areas. The temporary results during processing are also stored in register. Each register has a predefined function.

Define system bus

A computer system consists of different devices. The devices are connected together by a communications channel called bus. A bus consists of a set of communication lines or wires. It is used to moves a large amount of bits in the form of electrical pulses from one unit to another.

Name different types of system buses

There are three types of system buses. These are data bus, address bus and control bus.

Describe the use of system data bus

Data bus is used to carry data. It is an electrical path that connects CPU, memory, input/output devices and secondary storage devices. The bus contains parallel set of lines. A data bus with more lines can carry more data. A data bus with 16 lines can carry 16 bits (2bytes) of data.

What is the use of address bus?

Address bus is used to carry address information. It is a set of wires similar to data bus. It only connects central processing unit and memory. The computers used today have 32bit address lines. These computers can access 4GB of memory.

What is the use of control bus?

Control bus is used to carry control information from control unit to other units. The control information is used to direct the activities of all units. For example, the control unit directs the transfer of data from memory to ALU. The ALU uses this data for processing.

What is the use of computer storage?

The unit that is used to store programs and data permanently is known as computer storage. It is also known as commuter memory. Two types of computer memory are main memory and secondary memory.

Define main memory

A type of memory that is directly accessible by CPU is known as main memory. The contents of main memory are lost when the commuter is switched off. Data can be stored and retrieved in main memory much faster than secondary memory because it is present on motherboard. Its capacity is limited than secondary memory.

Define secondary memory

The secondary memory is used to store data and programs permanently. It has the capacity of storing large amount of data and programs. Some important examples of secondary memory are hard disk, floppy disk, CD ROM, etc. Secondary memory is also known as storage.

Describe the use of a port

A port is an interface or point of attachment. It connects peripheral devices with computer such as printers, keyboards or mouse. The port connectors are attached to motherboard. Each type of port operates at a certain speed. The speed is measured in kilobits per second or megabits per second.

Describe the use of serial port

A type of port that transmits one bit at a time is called serial port. It is usually used to connect devices that do not require fast data transmission like mouse and keyboard etc. Serial port is often referred to as communications (COM) port. It is attached directly to motherboard.

State the purpose of parallel port

The purpose of parallel port is to connect devices that require fast data transmission like printer and scanner etc. It is much faster than the serial port. Parallel ports are often referred to as Line Printer (LPT) ports.

Write the use of USB port

The use of USB port is to connect devices such as keyboard, mouse, joystick, scanner and printer etc. It has a maximum bandwidth of 12 Mbits per second. It can connect up to 127 devices.

Differentiate between serial port and parallel port

When using serial port, the bits are sent and received sequentially one at a time over that data wire. A parallel port has multiple data wires and the bits are sent simultaneously. Even though a serial port is slow, it can transmit data faster than a human can type.

Define input

Anything given to the computer is known as input. The input can be given in different forms such as text, image and sound etc.

Define input devices

The devices that are used to give data and instructions to the computer are known as input devices. The input devices convert data and instructions into a form that can be processed by commuter. These devices send this data to the processing unit for processing.

Write name of some commonly used input devices

Some commonly used input devices are keyboard, mouse, scanner, microphone

and digital camera.

What is the use of keyboard?

Keyboard is the most commonly used input device. It is used to enter data into the computer. The layout of keyboard is similar to a traditional typewriter. It also contains some extra command keys and function keys. The buttons on the keyboard are called keys.

Define QWERTY

A standard keyboard is normally called QWERTY keyboard. This is because the first six keys on top row of letters on this keyboard are Q, W, E, R, T and Y.

What is the use of function keys?

Function keys are used for performing different functions depending on the application being used. These keys provide the shortcuts to perform routine tasks on computer. These keys are marked from F1 to F2. Many programs support the use of function keys.

Describe cursor control keys

The cursor control keys are used to control the position of cursor. These keys are also known as arrow keys. These keys move the cursor from its current position to right, left, up or down. These keys are also used for screen navigation.

List some examples of pointing devices

Some important pointing devices are mouse, trackball, pointing stick, touchpad, touch screen, light pen, graphic tablet, joystick and pen-based system.

What do you know about mouse?

A mouse is a small and lightweight input device. It is also called pointing device. It is moved on a flat surface to control the movement of the pointer on screen. The pointer is an object that appears on the screen. It usually appears as an arrow.

How does mouse work?

Mouse is mostly used in graphical applications. It is moved on a flat surface to control the movement of the pointer on a screen. The mouse buttons are used to perform different tasks. Mouse contains a small ball at the bottom. The movement of the cursor depends on the movement of ball. Latest mouse uses a laser beam instead of ball to control the movement of the cursor.

Define mouse. What are the different events performed by mouse?

An activity that can be performed by using the mouse is known as mouse event. A typical mouse can perform different events. These events are left chick, right click and drag etc.

State the purpose of trackball

A trackball is a pointing input devices. It works like a mouse. It contains one to three buttons. It has a large rotating ball on the top. The body of the trackball is not

moved. The ball is rolled with fingers or palm of hand. The position of the cursor on screen is controlled by rotating the ball.

List any advantage of using trackball instead of mouse

The advantage of trackball is that it remains stationary. It does not require much space for use. It can be placed on any type of surface. Trackball is very popular input device for portable computers. It can also be used as separate input device with desktop computers.

What is joystick?

Joystick is an input device used for games, computer aided designs or simulations. It is like a leveler that moves in all directions. It is used to control the movement of pointer or some other objects.

Differentiate between mouse and joystick

There is a difference between mouse and joystick. The pointer on screen stops moving when the movement of mouse is stopped. However, the pointer continues to moves in the direction to which the joystick is pointing. The joystick has to move to its neutral position to stop the pointer.

Describe the use of scanner

A scanner is an input device. It is used to read the pictures and other printed material placed on its glass. It scans a whole page at once. It reads the picture, translates it in digital form and stores it in computers. The information is stored in the form of image or picture and not in the form of text.

How the scanned text is converted into actual text?

Optical Character Recognition software is required to read the image and convert it to actual text. This software varies widely in its ability to convert text to actual form.

What is the use of microphone?

A microphone is an input device. It is used to digitally record audio data like such as human voice. It can be plugged into a computer or recorder. It enables a sure to input text and issue commands orally. The software in the computer converts the sound waves into digital form.

What is purpose of voice recognition system?

A voice recognition system covert the speech of a person into digital data. It uses microphone as input device. It allows the user to use voice as input. It enables user to input text and issue commends orally such as opening programs and using menus etc.

What is light pen?

Light pen is a light-sensitive input device. Its shape is similar to a traditional pen. It is used to draw on computer screen or select menus. It is connected by a wire to the computer. It has a device at the tip that emits light. The pen sends information to the

computer when user touches the pen on certain areas of a specially designed screen.

What is digital camera?

Digital camera is an input device. It stores images digitally in its memory rather than recording on film. The pictures taken with a digital camera can be transferred to computer system. The pictures can be processed further with graphics programs. It does not require any film processing.

Describe the use of disk drive

A disk drive is used to read and write data on a disk. It rotates the disk with precise timing. It has one or more read/write heads to read and write data. The read/write heads read data from disk and transfer it to main memory for further processing.

Define output and its types

The data that has been processed into useful information is called output. The output shown on display screen is called softcopy output. The output printed on paper is called hardcopy output.

Define output devices

The hardware components that are used to receive information from the computer are called output devices. Output devices take information from the computer and convert it in a form that is understandable by the users.

Write names of some important output devices

Some important output devices are monitor, printer, plotter and speaker.

What is the use of the monitor?

The monitor is the most commonly used output device. It is also known as display or screen. The user looks at monitor while performing different tasks such as typing, issuing commands or surfing the Internet etc. An important factor that affects the quality of monitor is called resolution.

List different types of monitor

The different types of monitors are CRT monitor and flat panel monitor.

What is CRT monitor?

CRT monitor is the most common form of monitor. It consists of a phosphorus coasted screen. There are three electron guns on the back of screen. The phosphor coating of screen is organized into a grid of dots. The smallest number of phosphor dot that can be focused by the gun is called pixel.

What is flat panel monitor?

Flat panel monitor is small in size. It takes less space and is light weight. It is usually used in portable computers and laptops. It uses less energy than CRT. It is more expensive than CRT monitor. The most common flat panel monitor is known as Liquid Crystal Display (LCD) monitor.

Differentiate between soft copy and hard copy

Soft copy is in electronic form but hard copy is in printed form. Soft copy is easy to modify but hard copy is difficult to modify. Softy copy is stored on strange devices but hard copy is printed on paper. Soft copy can be duplicated with outcast but hard copy can be duplicated with cast.

Distinguish between CRT and LCD monitor

CRT is less expensive than LCD monitor. It takes more space and uses more energy than LCD Its weight it more than LCD.

What is video controller?

It is a device between CPU and monitor. It contains memory and circuitry to send information to monitor for display on screen. The resolution of monitor is actually determined by the video controller.

Define printer

A printer is an output device that prints characters, symbols and graphics on paper. The printed output is called hard copy. Print resolution is commonly measured in dots per inch (dpi). Printers are commonly used in businesses to print different documents.

What are impact printers?

An impact printer works like typewriters. It prints characters or images by striking a prints hammer or set of pains against an inked ribbon. The ink is pressed from ribbon on the paper to produce the output. Impact printers are the oldest print technologies.

What are non-impact printers?

A non-impact printer prints characters and graphics on paper without striking paper. Some printers use spray ink while others use heat and pressure to create images. These printers are faster than impact printers. The print quality of non-impact printers is better than impact printers.

Differentiate between impact and non-impact printer

An impact printer prints character or images by striking print hammer or set of pins against an inked ribbon. A non-impact printer prints characters and graphics on paper without sticking paper. The impact printers are slower than no impact printers. Non-impact printers provide better output.

List different impact printers

Deferent impact prints are dot matrix printer, daisy wheel printers and line printer.

What the names of two non-impact printers

Two examples of non-impact printers are inkjet printers and laser printers.

How does a dot matrix printer work?

A dot matrix printer produces printed images when tiny pins on a print head strike an

inked ribbon. When the ribbon is pressed against the paper, it creates dots that form characters and graphics. The print head on a dot matrix printer can contain nine to twenty-four pins.

How does a laser printer work?

The laser printer is a non-impact printer. Its working is similar to photocopying machine. It uses laser beams to burn special ink on the page to create a permanent image. The ink is known as toner. Laser printer creates height quality output at higher speed. It does not make much noise.

Compare inkjet and laser printers

Laser printer provides high-quality text and graphics output. The price of inkjet printer is less than laser printer. Laser printers are faster than inkjet printers.

How does an inkjet printer work?

An ink-jet printer prints characters and graphics by spraying tiny drops of liquid ink on paper. These printers can produce quality text and graphics in both black-and-white and color including photos. A typical inkjet printer provides a resolution of 300 dots per inch.

Define pixel

Pixel Standards picture elements. Pixels are the dos that form images on the monitor. The higher number of pixels increases image sharpness.

What is a plotter?

A plotter is a large scale printer. It receives commands from the computer to make drawings on paper. It creates output with one or more automatic pens. A plotter can draw continuous point-to-point

Lines from computer graphics files or commends. Plotters are much expensive than printers.

Name different types of plotters

Different types of plotters include drum plotter, flat bed plotter and electrostatic plotter.

What is CD-R?

CD-R stands for CD recordable. The user can write data on CD-R only once but can read it many times. The data written to CD-R cannot be erased. CD-R can store 700MB of data. It is equal to 80 minutes of digital audio or video.

What is CD-RW?

CD-RW stands for compact disc rewritable. The user can read and write data on CD-RW CD Writer is used to store data on CD-RW disc. The user can write data on CD-RW many times by erasing the existing contents. Normally, the user can rewrite 1000 times on CD-RW.

Differentiate between CD-R and CD-RW

CD-R is used to write data only once and red it many times. The data written to CD-R cannot be erased. CD-RW is used to read and write data many times. Normally, the user can rewrite 1000 times on CD-RW.

How is data accessed in sequential access storage?

The data in sequential access storage is accessed in a sequence. It cannot be accessed directly. This process reads data from beginning. It continues reading data until the required data is found. This method of accessing data is time-consuming.

How is data accessed in direct access steerage?

The data in direct access storage can be accessed directly. The required data can be accessed if its address is known. The required data is searched very quickly. Most ge4neral purpose computers have enough memory to store a few million characters.

What is main memory?

The main memory is known as working are of the computer. It is very fast but limit in capacity. A computer cannot work without main memory. Most general purpose computers have enough memory to store a few million characters.

Define RAM

RAM stands for random access memory. It is the primary storage device. It is also called direct access memory. It means that each byte in the memory cn be accessed directly. Any location in RAM can be accessed in the same amount of time. RAM is used to store data and instructions temporarily.

Why is RAM called Random Access Memory?

The main memory is called Random Access Memory because each memory cell of this memory can be accessed randomly i.e. without any sequence or order.

Why is RAM called volatile?

RAM is temporary memory. When the power is turned off, the information in this memory is lost. Thus it is called volatile memory.

Describe the use of DRAM

DRAM the most commonly used technology. It is the least expensive kind of RAM. It requires an electric current to maintain its electrical state. It is reach raged or refreshed again and again to maintain its data. The processor cannot access data of DRAM when it is being refreshed. That is why it is slow.

Describe the use of SRAM

SRAM is faster than DRAM but is more expensive. It does not need to be4 refreshed. It is normally used to build a very fast memory known as cache memory. Cache memory is very small in size. It is used to increase the performance of a computer.

State the purpose of ROM

The instructions in ROM prepare the computer for use. These contents of ROM can only be read but cannot be changed or deleted. It is not possible to write new information or instructions in ROM> it stores data and instructions permanently.

Differentiate between RAM and ROM

RAM is type of volatile memory. The contents in RAM are not stored permanently. ROM IS nonvolatile memory. Its contents can only be read and the new information cannot be written in it.

Why is ROM known as non-volatile memory?

ROM stores data and instructions permanently. When the power is switched off, the instructions stored in ROM are not lost. Therefore   ROM   is   called   non-volatile memory

What is PROM?

PROM is initially blank. The user or manufacturer can write data and programs on it using special devices. The user can write data and instructions on it only once. If there is any error in writing the instructions, the error cannot be removed from PROM. The chip becomes unusable.

What is EPROM?

This form of ROM is initially blank. The user or manufacturer can write data and programs on it using special devices. The data and programs written on it can be erased using ultraviolet rays. The user then a write new program on it.

What is EEPROM?

The user can erase and write instructions in EEPROM using electrically devices. The user can erase its contents electronically if any error occurs in writing instructions. The contents of EEPROM can be modified easily.

What is the user of secondary memory?

The secondary memory is used to store data and programs permanently. That's why it is known as non-volatile memory. The secondary memory has the capacity of storing large amount of data and programs.

Give example of important secondary memory

Some important examples of secondary memory are hard disk, USB flash drive, CDROM etc.

How can we write the data on and read from a floppy disk?

The data stored on floppy disk can be read with floppy disk drive. The read/write head in the floppy disk drive is used to read and write data on the floppy disk.

Write important advantages of hard disk

Hard disk provides large store capacity. It is much faster than floppy disks. It is the primary media for storing data and programs. The capacity of computer hard disk is

from 2 to 80 GB and more.

How is the performance of hard disk measured?

The performance of hard disk in measured by its data rate and seeks time. Data rate is the number of bytes per second that are delivered to CPU by the drive. Seek time is the time that is used to move the head to the required track after reading the address.

Define formatting

Formatting is a process of preparing a disk to store data. This process creates tracks and sectors on disk. Each track on a disk is divided into sectors.

Define low level formatting

A drive marks the tracks and sectors disk during low level formatting. It is usually done by manufacturer of the disk. This process writes the starting and ending points of each sector on the platter. It prepares the drive to store data.

Define high level formatting

The information about file storage is written on the disk during high level formatting. The information is known as file allocation table (FAT). This process also p4repares the disk to store data

What is compact disk?

Compact disk is the most widely used storage medial today. It is usually known as CD-ROM. It can store more than 700MB of data. It is very useful for storing audio and video data. The data stored on CD-ROM is a portable storage device.

What is magnetic tape?

Magnetic tape is an old storage media to store large amount of data permanently. It consists of a thin ribbon of plastic. The tape is coated with magnetic material. A tape drive is used to access the magnetic tape for writing and redoing data. Different magnetic tapes have different storage capacity.

How is data organized on magnetic tape?

The magnetic tape is divided into segments. Each segments is marked magnetically by a gap when disk is formatted. Each segment contains many tracks. These tracks run parallel to one another lengthwise. The first eight bits are used to save data. The last bit is used to store parity bit.

Differentiate between bit and byte

Bit stands for binary digit. It is the smallest unit of data that can be used by computer. It can be either 0 or 1. Byte is a collection of 8 bits. 1 byte is required to store one character.

Differentiate between primary memory and secondary memory

Primary memory is expensive and small but secondary memory is inexpensive and large. Primary memory directly connects to CPU but secondary memory is not

directly connected to CPU. Primary memory provides faster data access but secondary memory provides slow data access.

What is the difference between SRAM and DRAM?

DRAM holds its data dynamically. It does not hold it indefinitely. Each DRAM memory cell must be constantly refreshed to keep data in DRAM. SRAM does not require refreshing. It holds the data indefinitely as long as the computer remains on. It is faster than DRAM but it is more complex.

Why does DRAM us more power?

DRAM uses more power because it is recharged and refreshed again and again to maintain data.

What are disk drives?

Disk drive is used to read and write data in a disk. It has one or more read / write heads to read and write data. There are different types of disk drives for different types of disk. For example, a Floppy drive reads and writes data from floppy disk.

Define data

A collection of raw facts and figures is called data. The word raw means that the facts have not yet been processed to get their exact meaning. It may consist of numbers characters and symbols etc.

Define information

The processed data is called information. It is more meaningful than data. Information may consist of numbers, characters, symbols, pictures or sounds etc.

Differentiate between data and information

Data is a set of raw facts and information is the processed form of data. Data is used as input in the computers and information is the output of the computer.

Define number system

A set of values used to represent different quantities is known as number system. The total number of digits used in a number system is called its base or radix.

List different number systems

Different number systems include binary number system, decimal number system, octal number system and hexadecimal number system.

Describe the base or radix of a counting system

The number of digits used in any counting system defines its base or radix. For example, base of decimal systems is 10 because it uses digits 0 to 9. Similarly, the base of binary system is 2 because it uses digits 0 and 1.

State the role of octal and hexadecimal system

Both the Octal system and hexadecimal system are used in order to provide shorthand nitration to express long binary numbers.

Write down the useful property of octal system

The useful property of octal number system is that it can be converted directly into binary form by representing each individual digit by its 3-bbit binary equivalent.

Differentiate between binary number system and hexadecimal number system

The decimal system is base ten systems whereas the binary system is base two systems. Also, decimal system has ten digits (0 to 9) whereas binary system has only two digits (and 1).

What is decimal number system?

The decimal number system consists of ten digits from 0 to 9. The base of decimal number system is 10. It is the most widely used number system.

What is binary number system?

Binary number system consists of two digits 0 and 1. Its base is 2. Each digit or bit in binary number system can be 0 or 1. The weight of each position in binary number is a power of 2.

Why does digital computer use binary representation?

The electronic circuits used in digital computers have two states ON or OFF. The reason for using binary representation is that electronic components with two state devices are easier to construct and are more reliable and cheaper. The computing operations are simple and fast with two-state devices.

What is meant by octal number system?

Octal system consists of eight digits from 0 to 7. The base of octal system is 8. Each digit position in this system represents a power of 8. Any digit in this system is always less than 8.

What is meant by hexadecimal number system?

The hexadecimal system consists of 16 digits from 0 to 9 and A to F. The alphabets A to F are used to represent decimal numbers from 10 to 15. The base of this number system is 16.

Differentiate between 1's complement and 2's complement

1's complement of binary number is determined directly by replacing all 1s with 0s and all 0s with 1s. On the other hand, 2's complement finery number is determined by first taking 1's complement and then adding 1 in the result.

How 1's complement of binary number is determined?

1's complement of binary number is determined by replacing all 1s with 0s and all 0s with 1s.

How 2's complement of binary number is determined?

2's complement of binary number is determined by first taking 1's complement and then adding 1in the results.

Find 1's complement of 10111001

The 1's complement of 10111001 is 01000110.

What is computer code?

The language of electronic computer is binary. All numeric and non-numeric data must be converted into binary language so the computer can understand it. The representation of all numeric and non-numeric data in binary digits is known as computer code.

What is meant by BCD code?

BCD stands for Binary Coded Decimal. It used to represent decimal digits in binary. It is a 4bit code. It means that each decimal digit is represented by 4 binary digits. It was used by early computers.

What do you know about ASCII code?

ASCII stands for American Standard Code for Information Interchange. It was published by ANSI. It is the most widely used coding scheme for PC. A 7-bit code can represent 128 characters. An 8-bit code can represent 256 characters. The extended 128 unique codes represent graphic symbols.

What is Unicode?

Unicode is a 16-bit code. It can represent 65536 characters. It has started to replace ASCII code. It can represent the characters of al languages in the world.

Define LSD

LSD stands for least significant digital. It is the digit that appears at the extreme left side of a number.

Define MSD

MSD stands for most significant digit. It is the digit that appears at the extreme right side of a number.

What is Boolean algebra?

Boolean algebra is the algebra of logic. It is also called logical algebra or switching algebra. It was introduced by an English mathematician George Boole in 1847. It uses symbols to represent logical statements instead of words. It consists of different rules to manipulate symbols.

Define proposition

A logical statement that results in either TRUE or FALSE is called proposition. For example, the sentence (what is your address?) is not a proposition because its result is not in the form of TRUE or FASLE. However, the sentence (Are you student?) is a proposition as its result is TRUE or FALSE.

What are Boolean variables?

The variables used in Boolean algebra can be represented by different alphabets such as A, B, C....x, y, z. Each variable must take the value 1 or 0. These values

may be given different names such as true or false, yes or no and ON or OFF etc.

How many conditions a logical operation can test? Write their names

A logical operation can test three different conditions. These conditions include logical AND, logical OR and logical NOT.

Define logical AND operation

AND operation is used to perform logical multiplication of two binary variables or constants. The AND operation is performed by using AND operator. Is denoted by dot (.).

Define logical OR operation

The OR operation in Boolean algebra is used to perform logical addition of two binary variables or constants. The OR operation is performed by using OR operator. OR operator is denoted by dot (+).

Differentiate between AND and OR operation

The AND operation performs logical multiplication of two binary variables or constants. It is denoted by dot (.). The OR operation is performed by using OR operator. OR operator is denoted by dot (+).

Define logical NOT operation

NOT operation is used to complement a binary variable. A complement is inverse of a variable and is denoted by a bar over variable. NOT operation is performed by NOT operator denoted bar.

Define Boolean expression

A Boolean expression is a logical statement that is either true or false. It may consist of different elements of Boolean algebra such as Boolean variables, constants, logical operators and parentheses.

What is operator precedence in Boolean expression?

The order in which different types of operators in a Boolean expression are evaluated is known as operator precedence. It is also known as hierarchy of operators.

What is a Boolean function?

A Boolean function is an expression that can be formed by binary variables, Boolean operators, parentheses and "=" sign. The value of Boolean variable can be either 0 or 1.

How is Boolean function simplified?

Boolean expression is simplified using laws, rules and theorems f Boolean algebra. The simplified expression results in fewer variables and simpler circuit. A simpler expression results in simple and efficient hardware. It requires less number of logic gates that reduces the cost of production.

Define truth table

A truth table represents the output from different combinations of input variables.

Write the advantages and disadvantages of K- Map method

K-map is very easy to follow. It is a systematic process to simplify Boolean function. It is not scalable. It becomes complex for a large number of variable.

Define software

A set of instructions given to computer to solve a particular problem is called software. It is also known as program Computer software specify a sequence of operations to be performed by commuter.

Write the use of system software

A type of software that is used to contr5ol, monitor or facilitate the use of computer is called system software. A system software provides the interface to the computer. It controls the basic operations such as saving data on kiosk and printing a document etc.

What is the use of application software?

Application software is used to perform various applications on the computer. It helps a computer user to perform specific tasks. People use application software according to their needs. It is also known as software package.

Define operating system

An operating system is a set of programs that manages all computer components and operations. An operating system consists of different programs. These programs provide an environment in which other programs can be executed and the computer system can be used effectively.

Define user interface

A user interface is used to interact with computer. It controls how the user enters data and instructions and how information appears on screen.

Give some examples of GUI operating systems

Examples of GUI operating systems are Windows, Linux, Unix, and Solaris.

Write the names of popular operating systems

Some popular operating systems are Windows, Linux, Unix and Sun Solaris.

Write important functions of operating system

Important functions of operating system are managing hardware, memory management, process management and providing interface to the users.

What you mean by command line interface?

A type of user interface in which the user communicates with the operating system by typing commands with keyboard is called command line interface. Each command actuates a program in the operating system. The command line interface is difficult because the user has to remember commands.

Define GUI

A type of user interface in which the user communicates with the operating system by using a visual environment is called graphical user interface. It consists of windows, menus, icons and pointers.

The user can select commands from menus and select icons by suing a pointing device like mouse.

What is DOS?

DOS stands for disk Operating System. It is a single user operating system. It has been very popular on microcomputers up to mid-1990s. DOS was designed by IBM. It resides on the disk and controls all functioning of computer. It does not provide networking features.

Write all steps of going to DOS prompt

- Click Start button. The Start menu will appear.
- Select Programs menu. The Programs submenu will appear.
- Select Accessories. A submenu will appear.
- Select MS DOS Prompt option. The DOS prompt will be launched.

What do you know about batch file?

A batch file contains of different DOS commands. The extension of command fie is .com. The most important commands file in DOS is commands.com. It contains all internal commands of DOS.

What do you know about executable file?

A type of file that can be executed by the computer directly is called executable file. The extension of executable file is .exe. These files consist of machine language.

What do you know about command file?

Command files consist of different DOS commands. The extension of command file is .com. The most important command file in DOS is command. .Com. It contains all internal commands of DOS.

What is a DOS command?

Command is an instruction that tell the computer to perform some task. All commands in DS are typed on DOS prompt. The result on the command appears on the screen if it typed correct5ly. An error message appears if command contains error. The error massage describes the error in commands.

Why parameters are used with DOS commands?

Parameters are the additional information that is required by a command to execute properly. Parameters are always written after command name. A space must separate the command name and parameters. Some commands do not require any parameter whereas some require them.

State the propose of switches in DOS commands

Switches describer the way of execution of DOS commands. The switches change the working of a DDOS command according to the requirement. The result of a DOS command can be viewed in different ways using different switches. The switches are normally typed after slash.

What are internal commands?

The commands which are part of commands.com are known as internal commands. All internal co and are loaded into the memory automatically during booting process. These include the commonly used commands. These commands can be executed as long as the computer is switched on.

Name five internal commands

The five internal commands are DIR, TIME, DATE, VOL and VER.

What are external commands?

The commands which are saved on the disk as individual files are known as external commands. These commands are not loaded into the memory automatically. The user has to load them in memory before using them. Three types of files that can run as external commands are .exe .bat and .com files.

Name five external commands

The five internal commands are XCOPY, DISKCOPY, TREE, FORMAT and ATTRIB.

Different between DEL and DELETREE commands

DEL is and internal command and DELLTREE is an external command. The difference is that DEL command is used to delete files. DELTREE commands are used to a directory along with all contents in it.

Differentiate between DR and DELETREE commands

DR is an internal commands and DELTREE is an external command. Both commands are used to delete a directory. The difference is that RD can remove a directory that is empty. However, DELTREE command can delete directory along with all contents in that directory.

Differentiate between COPY and XCOPY commands

COPY is an internal command and XCOPY is an external command. COPY command is used to copy different files from place to another. XCOPY command is used to copy different files and subdirectories from one place to another.

Which command is used to Crete a new directory?

MD or MKDIR command is used to create a new directory. It is an internal command.

Which command is used to create a new file?

EDIT and COP CON commands are sued to create a new file in DOS.

Differentiate between COPY and XCOPY commands

COPY is internal command. It is used to copy files from one location to another. XCOPY is external command. It is used to copy files as well as subdirectories from one location to another.

Write the use of wild cards

Wild cards are special symbols used with DOS commands. Wild card can be used to view similar files or search a file whose name is not completely remembered. Two types of wild cards are* and ?

Define windows operation system

Windows pirating system is a family of operating systems for personal computers. It is the most popular operating system used on personal computers. Almost 90% personal computers in the world use Window. It was developed by Microsoft Corporation. It graphical user interface (GUI).

How will you explain Hardware Compatibility?

Hardware compatibility means that Windows supports hardware from various vendors. It has the feature of plug and play. When a new hardware device is attached to computer, it detects the device and installs its driver automatically if it is available.

Write down three features of Windows?

Three features of Windows are multitasking, hardware compatibility and easy Internet access.

What is multitasking?

Multitasking is an ability of an operating system to execute more than one programs at the same time. A user can run multiple programs at the same time. Windows is a multitasking operating system.

What are disk drives?

Disk drives are the devices that are used to store data. Most computers have hard drive, floppy drive and CD-ROM drive.

Define Folder

The logical division of drive where files are stored is known as folder. The folders are used to organize data stored on drives. The files are organized on folders to access them easily. The similar types of files are normally stored in single folder.

What is the importance of folder?

Folders are very important in organizing the files on computer system. The files can be searched quickly and easily if they are stored in folders.

Differentiate between file and folder

A file is a collection of related data stored on a computer. Folders are used to organize the files on the disk.

Write steps to create a folder

1. Open Windows Explorer and select the drive or fodder in which the new folder is to be created
2. Right click in right pane I the whit area and select New from the menu.
3. Select Folder. A new folder will appear.
4. Type the name of the new folder and press Enter.

What are different parts of a file? Give an example

The file consists of file name and file extension separated by dot. File extension indicates the type of file. An example of file is MYFILE. TXT. In this example, MYFILE is the name of file and TXT is the file extension.

Why is a file extension attached with a file?

A set of related data stored with single name is called file. The extension indicates the type of file and the application in which the file can be opened. The program used to create a file automatically assigns file extension to file. The user does not need to specify file extension to a file.

What is icon?

An icon is a small graphic image. It appears on a program, drive, folder or document. Windows operating system uses icons frequently to make the environment user-friendly.

Name some important icons of Windows operating system

The important icons in Windows operating system are My Computer, My Documents, Recycle Bin and Internet Explorer.

What is the difference between shortcut and icon?

A shortcut is a link to a program, drive, folder or document. It helps the user to execute commands quickly. An icon is a small graphic image. Windows operating system uses icons frequently to make the environment user-friendly.

Differentiate between folder and drive

A drive is the storage area on a storage device such as C: \ or E: \ The folder is a logic division of a drive where files are stored. The folders are used to organize data stored on derives.

Write the use of recycle bin

Recycle Bin is a temporary storage area. It is used to keep deleted files. When a file or folder is deleted, it is not removed from the disk permanently. Windows moves it to Recycle Bin. The files remain there until the user recovers them or deletes them permanently.

Describe the use of Internet Explorer

Internet Explorer icon is used to launch Internet Explorer web browser. It is used to access the information available on the Internet. It is automatically installed during

the installation of Windows. The users can double click the icon to start Internet Explorer.

What is the use of taskbar in Windows?

A bar that appears at the bottom of Windows desktop is known as taskbar. It displays Start button on the left side. It displays a button for each open application. The user can switch between different windows by clicking on required window.

What is the benefit of using shortcut in Windows?

Shortcut is used to access files, folders, drives or printers quickly. It saves a lot of time. It is easy to remember one place instead of remembering the paths of various files, folders and programs.

What is windows explorer?

Window explorer acts as a file manager in Windows operating system. It is used to manage files and folder on computer. It is an efficient way to locate and manage files on computer. Many actions can be performed n files and folders using Window explorer.

Write the steps to pen Windows Explorer

1. Click on Start button. The Start menu will appear.
2. Click on Programs option. A list of installed programs will appear.
3. Select Windows Explorer.

Define desktop

The fist screen that appears after logging into the computer is known as desktop. It contains different objects and icons.

Name common icons displayed on desktop

Desktop contains different icons on it. Some common icons are My Computer, My Documents and Recycle Bin etc.

What is Start button?

Start button spears at the bottom of desktop. It is used to access various installed programs. The user can also access recently used files with Start button.

Write the step to open recently used document

1. Click Start button and point to Documents option. A list of recently used documents appears.
2. Click the required document to open.

What is a menu?

A list of options to perform different tasks is known as menu. These options are called commands program menu. Each option in menu performs a specific task.

What is control panel?

Control Panel is a collection of tools to change the appearance and working of computer. The tools are used to customize Windows according to user preferences.

It contains different icons to perform different tasks.

Write steps to search a file

1. Click on Start button. The Start menu wills appear.
2. Select find option from the menu. A new window will appear.
3. Enter appropriate words in to textboxes and click Search button.

Define computer virus

A computer virus is program or set of programs that can cause damage to computer system. It may disturb the normal working of a computer system. The code in computer virus is attached to some part of operating system or computer programs.

How does a computer get a virus?

A computer can get virus from a copied file in which a virus is attached. The user may download files from Internet or copy programs on floppy disks that may contain viruses.

How virus is activated?

A virus is activated when the user executes a program that contains virus. A user may have downloaded a computer game that constrains virus. It will be activated when at the user runs that game.

What is antivirus program?

Antivirus is software that detects and removes a virus on computer. A virus can be stopped from entering computer with the help of a good antivirus program.

Name different mouse actions

Different mouse actions are point, click, right click, double click and drag.

List different controls of a window

Different controls of a widow are minimize button, maximize button, close button, restore button and scrollbars.

Name five options of control panel

The five options of control panel are Add/Remove Hardware, Add/Remove Programs, Printers, keyboarded and Mouse.

Name different antivirus programs

Different antivirus programs are McAfee, Semantic, AVG, and Kaspersky.

What is the proper way of shut downing the computer?

The proper way for shut downing the computers is to use shut down command. Th4e command is available in Start menu.

Write the steps to shut down Windows.

1. Click Start button, The Start menu will appear.
2. Click on Shutdown button. A new window will appear;
3. Select Shut down and then click OK button.